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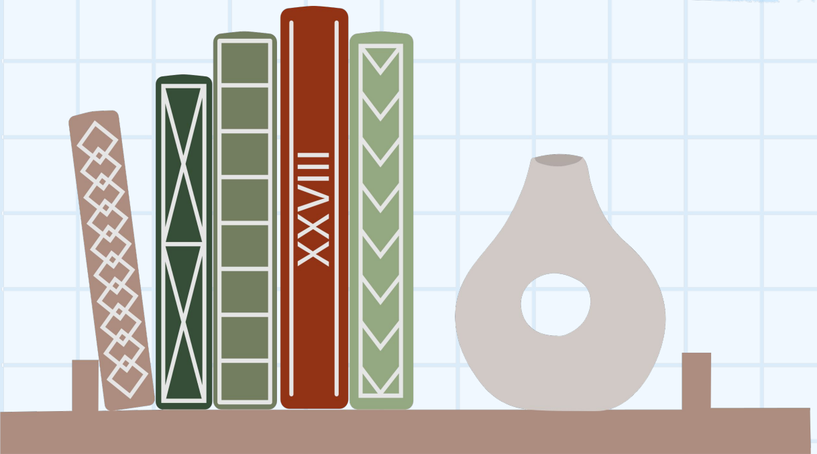
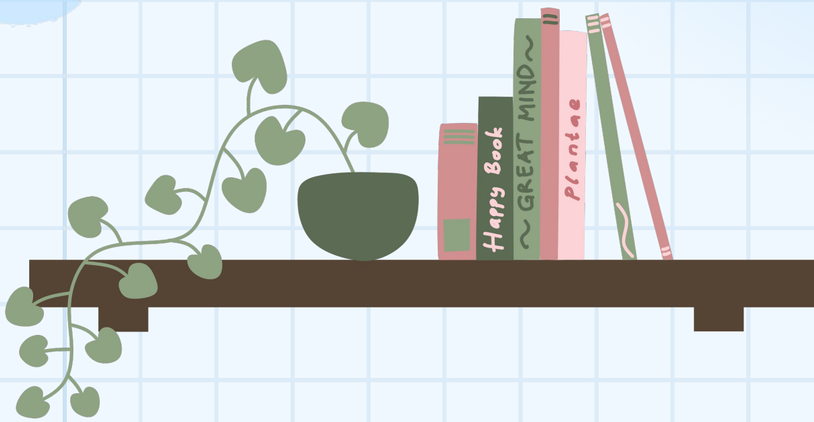
BS./BSC.IN

Applied AI and Data Science

Basics of Data Analytics





Let's dive into and learn:

1 More Types of Data

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Data Types

- Data is in essence any information that can help us make decisions.
- Data is information, facts, or statistics that you can analyze and interpret.
- You can use data across various fields and industries to guide decision-making, optimize processes, and uncover valuable insights.

Data Types

- As you work with data, you will find four main categories

    1. Nominal data
    2. Ordinal data
    3. Discrete data
    4. Continuous data

Nominal Data

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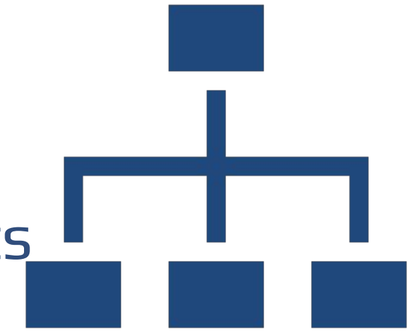
- Refers to categorical information that lacks inherent order or ranking
- Often use it to classify or group items based on their attributes
- Nominal data is often the target variable in classification problems where we have to classify the data into different groups
- E.g. gender, nationality, or sector (rural/urban)
- Descriptive Analytics using frequency tables or bar charts to visualize the distribution of categories.



Ordinal Data

- Represents information with a clear order or ranking
- Differences between the values are not quantifiable
- E.g. customer satisfaction ratings, educational levels, or survey responses
- Descriptive Analytics - median, and using bar charts or pie charts to display the data distribution.

Discrete Data

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- Distinct, separate values or categories that you can measure
- Represented as whole numbers
- E.g. number of employees in a company,

the number of cars in a parking lot, or the number of customers visiting a store

- Descriptive Analytics -Mode, histograms or bar charts for visualization

Continuous Data

- Information that can assume any value within a defined range or interval.
- Typically measured on a continuous scale, such as time, temperature, or distance.
- E.g. person's height, weight, or the speed of a car.

- Descriptive Analytics - calculating mean, median, standard deviation, Visualizing with histograms, scatterplots, or line charts

Quantitative Data

- Quantitative Data is numerical information that you can measure, count, or express using numbers.
- Allows you to perform various calculations, such as averages, correlations, and regressions, to identify patterns, trends, and relationships.
- E.g. temperature, age, and number of purchases.
- Discrete data and continuous data are types of quantitative data.

Qualitative Data

- Qualitative Data is non-numerical information describing qualities, characteristics, or opinions.
- Analyzing involves categorizing, coding, or interpreting the information to reveal patterns or themes.
- E.g. customer feedback, colors, or textures.
- Thematic analysis, sentiment analysis, and descriptive statistics. Visualizations, such as word clouds

Recap

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More types of Data

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Thank you